

THE ANNALS
of
PROBABILITY

AN OFFICIAL JOURNAL OF
THE INSTITUTE OF MATHEMATICAL STATISTICS

VOLUME 1

1973



CONTENTS OF VOLUME 1

ARTICLES AND SHORT COMMUNICATIONS

ALVAREZ, M. A. GARCIA and MEYER, P. A. Une theorie de la dualité à ensemble polaire près. I.....	207-222
ATHREYA, KRISHNA B. and KURTZ, THOMAS G. A generalization of Dynkin's identity and some applications.....	570-579
BAKER, CHARLES R. On equivalence of probability measures.....	690-698
BERK, KENNETH N. A central limit theorem for m -dependent random variables with unbounded m	352-354
BERMAN, SIMEON M. Excursions of stationary Gaussian processes above high moving barriers.....	365-387
BLACKWELL, DAVID and FREEDMAN, DAVID. On the amount of variance needed to escape from a strip.....	772-787
BLUM, J. R. and EISENBERG, B. A note on random measures and moving averages on non-discrete groups.....	336-337
BLUM, JULIUS and PATHAK, P. K. Measure-invariant sets.....	590-602
BREIMAN, LEO. A note on minimax filtering.....	175-179
BURKHOLDER, D. L. Distribution function inequalities for martingales.....	19-42
CAMBANIS, STAMATIS and RAJPUT, BALRAM S. Some zero-one laws for Gaussian processes.....	304-312
CHAO, JIA-ARNG. A note on martingale square functions.....	1059-1060
CHOVER, J., NEY, P. and WAINGER, S. Degeneracy properties of sub-critical branching processes.....	663-672
CHOW, Y. S. and LAI, T. L. Limiting behavior of weighted sums of independent random variables.....	810-824
CONN, PATRICIA S. and MADSEN, RICHARD W. Ergodic behavior for nonnegative kernels.....	995-1013
DEO, CHANDRAKANT, M. A note on empirical processes of strong-mixing sequences.....	870-875
DEO, CHANDRAKANT M. A note on strong-mixing sequences.....	186-187
DEO, CHANDRAKANT M. A weak convergence theorem for Gaussian sequences.....	1061-1064
DERRIENNIC, YVES. On the integrability of the supremum of ergodic ratios.....	338-340
DE SMIT, JOS H. A. A simple analytic proof of the Pollaczek-Wendel identity for ordered partial sums.....	348-351
DROGIN, RICHARD. On convergence in probability to Brownian motion.....	254-262
DUBINS, LESTER E. Which functions of stopping times are stopping times?.....	313-316
DUDLEY, R. M. Sample functions of the Gaussian process.....	66-103
EISENBERG, B. and BLUM, J. R. A note on random measures and moving averages on non-discrete groups.....	336-337
ERICKSON, K. BRUCE. Self-annihilating branching processes.....	926-946
ERICKSON, K. BRUCE and GUESS, HARRY. A characterization of the exponential law.....	183-185

ERICKSON, R. V. On an L_p version of the Berry-Esséen theorem for independent and m -dependent variables	497-503
ERICKSON, R. V. On L_p Chebyshev-Cramér asymptotic expansions	355-361
ESARY, J. D., MARSHALL, A. W. and PROSCHAN, F. Shock models and wear processes	627-649
FÖLLMER, HANS. On the representation of semimartingales	580-589
FRASER, DAVID F. The rate of convergence of a random walk to Brownian motion	699-701
FREEDMAN, DAVID. Another note on the Borel-Cantelli lemma and the strong law with the Poisson approximation as a by-product	910-925
FREEDMAN, DAVID and BLACKWELL, DAVID. On the amount of variance needed to escape from a strip	772-787
GARSIA, ADRIANO, M. On a convex function inequality for martingales	171-174
GEMAN, DONALD. A note on the distribution of hitting times	854-856
GEMAN, D. and HOROWITZ, J. Occupation times for smooth stationary processes	131-137
GETOOR, R. K. and SHARPE, M. J. Last exit times and additive functionals	550-569
GISSELQUIST, RICHARD. A continuum of collision process limit theorems	231-239
GOROSTIZA, LUIS G. The central limit theorem for random motions of d -dimensional Euclidean space	603-612
GREENWOOD, PRISCILLA. Asymptotics of randomly stopped sequences with independent increments	317-321
GRIFFEATH, DAVID. The maximal oscillation problem for regenerative phenomena	405-416
GRIFFITHS, GARY N., PLATT, RONALD D. and WRIGHT, F. T. Convergence to zero of quadratic forms in independent random variables	838-848
GUESS, HARRY and ERICKSON, K. BRUCE. A characterization of the exponential law	183-185
HENDRICKS, W. J. A dimension theorem for sample functions of processes with stable components	849-853
HEYDE, C. C. and SCOTT, D. J. Invariance principles for the law of the iterated logarithm for martingales and processes with stationary increments	428-436
HOLLANDER, MYLES and KORWAR, RAMESH M. Contributions to the theory of Dirichlet processes	705-711
HOROWITZ, J. and GEMAN, D. Occupation times for smooth stationary processes	131-137
ISAACSON, DEAN L. and MADSEN, RICHARD. Strongly ergodic behavior for non-stationary Markov processes	329-335
JAIN, N. C. and TAYLOR, S. J. Local asymptotic laws for Brownian motion	529-549
KALLIANPUR, G. and OODAIRA, H. Non-anticipative representations of equivalent Gaussian processes	104-122
KAPLAN, NORMAN. The multitype Galton-Watson process with immigration	947-953

KEIDING, NIELS and NIELSON, JOHN, E. The growth of supercritical branching processes with random environments.....	1065-1067
KHAN, RASUL A. A note on the rate of convergence and its applications.....	504-508
KIEFFER, J. C. A counterexample to Perez' generalization of the Shannon-McMillan theorem.....	362-364
KINGMAN, J. F. C. Subadditive ergodic theory. Discussion by D. L. Burkholder, Daryl Daley, H. Kesten, P. Ney and J. M. Hammersley..	883-909
KLASS, MICHAEL J. Properties of optimal extended-value stopping rules S_n/n	719-757
KNIGHT, FRANK B. Local variation of diffusion in local time.....	1026-1034
KORWAR, RAMESH H. and HOLLANDER, MYLES. Contributions to the theory of Dirichlet processes.....	705-711
KOSTKA, DAVID G. On Khintchine's estimate for large deviations.....	509-512
KUMWAR, A. A note on the convergence of stable and class L probability measures.....	716-717
KUO, HUI-HSIUNG. Absolute continuity of measures corresponding to diffusion processes in Banach space.....	513-518
KURTZ, THOMAS G. and ATHREYA, KRISHNA B. A generalization of Dynkin's identity and some applications.....	570-579
KURTZ, THOMAS G. and WAINGER, STEPHEN. The nonexistence of the Yaglom limit for an age dependent subcritical branching process.....	857-861
LAI, T. L. and CHOW, Y. S. Limiting behavior of weighted sums of independent random variables.....	810-824
LAI, TZE LEUNG. Gaussian processes, moving averages and quick detection problems.....	825-837
LE PAGE, RAOUL. Subgroups of paths and reproducing kernels.....	345-347
LEVIATAN, TALMA. On Markov processes with random starting time....	223-230
LEVITAN, MICHAEL L. and SMOLOWITZ, LAWRENCE H. Limit theorems for reversible Markov processes.....	1014-1025
LIGGET, THOMAS M. An infinite particle system with zero range interactions.....	240-253
LING, ROBERT F. The expected number of components in random linear graphs.....	876-881
LLOYD, STUART P. and MALLOWS, COLIN L. An index of genealogical relatedness derived from a genetic model.....	758-771
LOGAN, B. F., MALLOWS, C. L., RICE, S. O. and SHEPP, L. A. Limit distributions of self-normalized sums.....	788-809
MACQUEEN, JAMES B. A linear extension of the martingale theorem.....	263-271
MADSEN, RICHARD W. and CONN, PATRICIA, S. Ergodic behavior for nonnegative kernels.....	995-1013
MADSEN, RICHARD W. and ISSACSON, DEAN L. Strongly ergodic behavior for non-stationary Markov processes.....	329-335
MALLOWS, C. L. Bounds on distribution functions in terms of expectations of order-statistics.....	297-303
MALLOWS, COLIN L. and LLOYD, STUART P. An index of genealogical relatedness derived from a genetic model.....	758-771

MALLOWS, C. L., RICE, S. O., SHEPP, L. A. and LOGAN, B. F. Limit distributions of self-normalized sums	788-809
MARCUS, M. B. A comparison of continuity conditions for Gaussian processes	123-130
MARCUS, M. B. Continuity of Gaussian processes and random Fourier series	968-981
MARLOW, NORMAN A. High level occupation times for continuous Gaussian processes	388-397
MARSHALL, A. W., PROSCHAN, F. and ESARY, J. D. Shock models and wear processes	627-649
McKEAN, H. P. Geometry of differential space	197-206
MEYER, P. A. and ALVAREZ, M. A. GARCIA. Une theorie de la dualité à ensemble polaire près. I.	207-222
MEYER, R. M. A Poisson-type limit theorem for mixing sequences of dependent 'rare' events	480-483
MILLAR, P. W. Radial processes	613-626
MUCCI, ANTHONY G. On a class of secretary problems	417-427
NAUS, JOSEPH L. and WALLENSTEIN, SYLVAN R. Probabilities for a k th nearest neighbor problem on the line	188-190
NEY, P., WAINGER, S. and CHOVER, J. Degeneracy properties of subcritical branching processes	663-672
NIELSON, JOHN E. and KEIDING, NIELS. The growth of supercritical branching processes with random environments	1065-1067
OODAIRA, HIROSHI. The law of the iterated logarithm for Gaussian processes	954-967
OODAIRA, H. and KALLIANPUR G. Non-anticipative representations of equivalent Gaussian processes	104-122
OREY, STEVEN and PRUITT, WILLIAM E. Sample functions of the N -parameter Wiener process	138-163
ORNSTEIN, DONALD S. An application of ergodic theory. Discussion by P. C. Shields, R. M. Blumenthal, K. Jacobs, U. Krengel, W. Krieger, G. Maruyama, H. Totoki and B. Weiss	43-65
OWEN, WILLIS L. An estimate for $E(S_n)$ for variables in the domain of normal attraction of a stable law of index α , $1 < \alpha < 2$	1071-1073
PATHAK, P. K. and BLUM, JULIUS. Measure-invariant sets	590-602
PLATT, RONALD D., WRIGHT, F. T. and GRIFFITHS, GARY N. Convergence to zero of quadratic forms in independent random variables	838-848
POSNER, EDWARD C. and RODEMICH, EUGENE. Epsilon entropy of stochastic processes with continuous paths	674-689
PROSCHAN, F., ESARY, J. D. and MARSHALL, A. W. Shock models and wear processes	627-649
PRUITT, WILLIAM E. and OREY, STEVEN. Sample functions of the N -parameter Wiener process	138-163
RAJPUT, BALRUM S. and CAMBANIS, STAMATIS. Some zero-one laws for Gaussian processes	304-312
RESNICK, SIDNEY I. Record values and maxima	650-662
RICE, S. O., SHEPP, L. A., LOGAN, B. F. and MALLOWS, C. L. Limit distributions of self-normalized sums	788-809

ROBERTS, FRED S. A note on Fine's axioms for qualitative probability...	484-487
RODEMICH, EUGENE and POSNER, EDWARD, C. Epsilon entropy of stochastic processes with continuous paths.....	647-689
ROOT, D. and RUBIN, H. A probabilistic proof of the normal convergence criterion.....	867-869
ROSENKRANTZ, WALTER A. A method for computing the asymptotic limit of a class of expected first passage times.....	1035-1043
RUBIN, H. and ROOT, D. A probabilistic proof of the normal convergence criterion.....	867-869
RUDIN, WALTER. Limits of ratios of tails of measures.....	982-994
SCOTT, D. J. and HEYDE, C. C. Invariance principles for the law of the iterated logarithm for martingales and processes with stationary increments.....	428-436
SEN, PRANAB KUMAR. An almost sure invariance principle for multivariate Kolmogorov-Smirnov statistics.....	488-496
SENETA, E. A Tauberian theorem of E. Landau and W. Feller.....	1057-1058
SERFOZO, RICHARD. Weak convergence of superpositions of randomly selected partial sums.....	1044-1056
SHARPE, M. J. and GETOOR, R. K. Last exit times and additive functionals.....	550-569
SHEPP, L. A., LOGAN, B. F., MALLOWS, C. L. and RICE, S. O. Limit distributions of self-normalized sums.....	788-809
SMOLOWITZ, LAWRENCE H. and LEVITAN, MICHAEL L. Limit theorems for reversible Markov processes.....	1014-1025
ŠTEPÁN, JOSEF. The probability limit identification function exists under the continuum hypothesis.....	712-715
STOUT, WILLIAM F. Maximal inequalities and the law of the iterated logarithm.....	322-328
SMYTHE, R. T. Strong laws of large numbers for r -dimensional arrays of random variables.....	164-170
TAYLOR, S. J. and JAIN, N. C. Local asymptotic laws for Brownian motion.....	527-549
TEICHER, HENRY. A classical limit theorem without invariance or reflection.....	702-704
TURNBALL, BRUCE W. Inequalities for branching processes.....	457-474
TURNBALL, BRUCE W. Inequalities for multitype branching processes...	475-479
WAINGER, S., CHOVER, J. and NEY, P. Degeneracy properties of subcritical branching processes.....	663-672
WAINGER, STEPHEN and KURTZ, THOMAS G. The nonexistence of the Yaglom limit for an age dependent subcritical branching process....	857-861
WALLENSTEIN, SYLVAN R. and NAUS, JOSEPH I. Probabilities for a k th nearest neighbor problem on the line.....	188-190
WELSCH, ROY E. A convergence theorem for extreme values from Gaussian sequences.....	398-404
WICHURA, MICHAEL J. A note on the convergence of series of stochastic processes.....	180-182
WICHURA, MICHAEL J. Boundary crossing probabilities associated with Motoo's law of the iterated logarithm.....	437-456

WICHURA, MICHAEL J. Some Strassen-type laws of the iterated logarithm for multiparameter stochastic processes with independent increments.....	272-296
WINKLER, WILLIAM. A note on continuous parameter zero-two law.....	341-344
WOLFE, STEPHEN J. On the local behavior of characteristic functions.....	862-866
WRIGHT, F. T. A bound on tail probabilities for quadratic forms in independent random variables whose distributions are not necessarily symmetric.....	1068-1070
WRIGHT, F. T., GRIFFITHS, GARY N. and PLATT, RONALD D. Convergence to zero of quadratic forms in independent random variables.....	838-848

BOOK REVIEWS

CHUNG, KAI LAI. Review of "An Introduction to Probability Theory and its Applications 2" by William Feller, 2nd. ed.....	193
--	-----

NOTES

DUDLEY, R. M. Correction to "A counterexample on measurable processes".....	191
---	-----

OBITUARIES

PAUL LÉVY, 1886-1971.....	Michel Loève	1-18
---------------------------	--------------	------

